

ZXM64N035L3

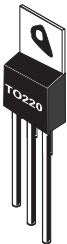
35V N-CHANNEL ENHANCEMENT MODE MOSFET

SUMMARY

$V_{(BR)DSS} = 35V$; $R_{DS(on)} = 0.060\Omega$; $I_D = 13A$

DESCRIPTION

This new generation of high cell density planar MOSFETs from Zetex utilises a unique structure that combines the benefits of low on-resistance with fast switching speed. This makes them ideal for high efficiency, low voltage, power management applications.

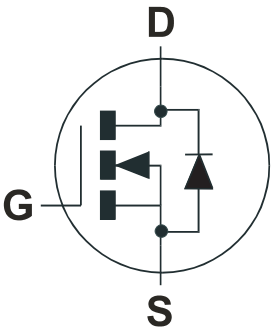


FEATURES

- Low on-resistance
- Fast switching speed
- Low threshold
- Low gate drive
- TO220 package

APPLICATIONS

- 100W Class D Audio Output Stage
- Motor Control

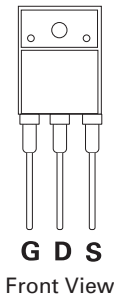


ORDERING INFORMATION

DEVICE	MULTIPLES
ZXM64N035L3	1000

DEVICE MARKING

- ZXM6
- 4N035



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ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	LIMIT	UNIT
Drain-Source Voltage	V_{DSS}	35	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ($V_{GS}=10V$; $T_C=25^\circ C$)(a) ($V_{GS}=10V$; $T_A=25^\circ C$)(b)	I_D	13 3.5	A
Pulsed Drain Current (b)	I_{DM}	30	A
Continuous Source Current (Body Diode)(b)	I_S	2.4	A
Pulsed Source Current (Body Diode)(b)	I_{SM}	30	A
Power Dissipation at $T_A=25^\circ C$ (a) Linear Derating Factor	P_D	20 160	W mW/ $^\circ C$
Power Dissipation at $T_A=25^\circ C$ (b) Linear Derating Factor	P_D	1.5 12	W mW/ $^\circ C$
Operating and Storage Temperature Range	$T_j:T_{stg}$	-55 to +150	$^\circ C$

THERMAL RESISTANCE

PARAMETER	SYMBOL	VALUE	UNIT
Junction to Case (a)	$R_{\theta JC}$	6.25	$^\circ C/W$
Junction to Ambient (b)	$R_{\theta JA}$	83.3	$^\circ C/W$

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ELECTRICAL CHARACTERISTICS (at $T_A = 25^\circ\text{C}$ unless otherwise stated).

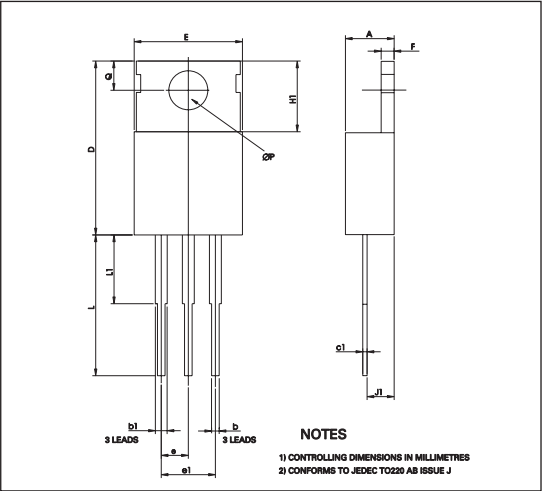
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
STATIC						
Drain-Source Breakdown Voltage	V(BR)DSS	35			V	ID=250μA, VGS=0V
Zero Gate Voltage Drain Current	IDSS			1	μA	VDS=35V, VGS=0V
Gate-Body Leakage	IGSS			100	nA	VGS=±20V, VDS=0V
Gate-Source Threshold Voltage	VGS(th)	1.0			V	ID=250μA, VDS= VGS
Static Drain-Source On-State Resistance (1)	RDS(on)			0.060 0.070	Ω Ω	VGS=10V, ID=3.7A VGS=4.5V, ID=1.9A
Forward Transconductance (1)(3)	gfs	4.3			S	VDS=10V,ID=1.9A
DYNAMIC (3)						
Input Capacitance	Ciss		950		pF	VDS=25V, VGS=0V, f=1MHz
Output Capacitance	Coss		200		pF	
Reverse Transfer Capacitance	Crss		50		pF	
SWITCHING(2) (3)						
Turn-On Delay Time	td(on)		4.2		ns	VDD =15V, ID=3.7A RG=6.0Ω, VGS=10V
Rise Time	tr		4.5		ns	
Turn-Off Delay Time	td(off)		20.5		ns	
Fall Time	tf		8		ns	
Total Gate Charge	Qg			27	nC	VDS=24V,VGS=10V, ID=3.7A
Gate-Source Charge	Qgs			5	nC	
Gate-Drain Charge	Qgd			4.5	nC	
SOURCE-DRAIN DIODE						
Diode Forward Voltage (1)	VSD			0.95	V	TJ=25°C, IS=3.7A, VGS=0V
Reverse Recovery Time (3)	trr		24.5		ns	TJ=25°C, IF=3.7A, di/dt= 100A/μs
Reverse Recovery Charge (3)	Qrr		19.1		nC	

NOTES

- (1) Measured under pulsed conditions. Width=300 μs . Duty cycle $\leq 2\%$.
- (2) Switching characteristics are independent of operating junction temperature.
- (3) For design aid only, not subject to production testing.

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Package Outline



Package Dimensions

DIM	Millimetres		Inches	
	Min	Max	Min	Max
A	3.56	4.82	0.140	0.189
b	0.38	1.01	0.015	0.040
b1	1.15	1.77	0.045	0.070
c1	0.41	0.50	0.016	0.020
D	14.23	16.51	0.560	0.650
E	9.66	10.66	0.380	0.419
e	2.29	2.79	0.090	0.110
e1	4.83	5.33	0.190	0.210
F	0.51	1.39	0.20	0.055
H1	5.58	6.85	0.230	0.270
J1	2.04	2.92	0.080	0.115
L	12.70	14.73	0.500	0.580
L1	—	6.35	—	0.250
ØP	3.54	4.08	0.139	0.160
Q	2.54	3.42	0.100	0.134

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Zetex plc
Fields New Road
Chadderton
Oldham, OL9 8NP
United Kingdom
Telephone (44) 161 622 4422
Fax: (44) 161 622 4420

Zetex GmbH
Streitfeldstraße 19
D-81673 München
Germany
Telefon: (49) 89 45 49 49 0
Fax: (49) 89 45 49 49 49

Zetex Inc
700 Veterans Memorial Hwy
Hauppauge, NY11788
USA
Telephone: (631) 360 2222
Fax: (631) 360 8222

Zetex (Asia) Ltd
3701-04 Metroplaza, Tower 1
Hing Fong Road
Kwai Fong
Hong Kong
Telephone: (852) 26100 611
Fax: (852) 24250 494

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